

REMARKS

This application has been reviewed in light of the Office Action dated November 2, 2005. Claims 1, 33, 35, 37 and 38 are pending in this application, of which Claims 1, 35 and 37 are in independent form. Claims 1, 35 and 37 have been amended to define still more clearly what Applicant regards as his invention. Claims 31 and 32 have been canceled. Claim 38 has been added to assure Applicant a fuller measure of protection of the scope to which he deems himself entitled. Favorable reconsideration of the present claims is respectfully requested. The canceled claims will not be further addressed herein.

Claims 1, 33, 35 and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,611,288 (Fossum) in view of U.S. Patent No. 5,185,883 (Ianni), and further in view of U.S. Patent No. 5,982,946 (Murakami). Applicant respectfully traverses this rejection, for the following reasons.

As shown above, Applicant has amended independent Claims 1, 35 and 37 in terms that more clearly define what he regards as his invention. Applicant submits that these amended independent claims, together with the remaining claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

Claim 1 is directed to an image processing apparatus comprising extraction means for extracting a pixel signal of an image pickup means that has a plurality of pixels, and for determining positional information of defective pixels based on the pixel signal. Also included is a block-forming means for judging whether a plurality of the defective pixels are adjacent to each other on the basis of the positional information of the defective pixels, and encoding the adjacent defective pixels which are continuously located

in one direction by using run-length codes which are information on the first coordinate values and lengths of the plurality of defective pixels, the block-forming means defining a block containing the adjacent defective pixels and peripheral, non-defective pixels for correcting the defective pixels. A storage means stores positional information of the plurality of defective pixels and peripheral, non-defective pixels for correcting the defective pixels within the block as regional information of the defective pixels, and a correction means corrects the defective pixels by using the peripheral pixels of the defective pixels, wherein the correction means corrects the plurality of defective pixels within the block based on the positional information of the plurality of defective pixels and peripheral, non-defective pixels for correcting the defective pixels within the block as region information of the defective pixels.

Among other notable features of Claim 1 is (1) storage means for storing positional information of the plurality of defective pixels and peripheral, non-defective pixels for correcting the defective pixels within the block as regional information of the defective pixels and (2) correction means for correcting the defective pixels by using the peripheral pixels of the defective pixels, wherein the correction means corrects the plurality of defective pixels within the block based on the positional information of the plurality of defective pixels and peripheral, non-defective pixels for correcting the defective pixels within the block as region information of the defective pixels. By virtue of the structure recited in Claim 1, the time required for correction processing is reduced since it is not necessary to newly extract non-defective pixels in order to correct the defective pixels

within the block. This is advantageous particularly when photographing is conducted many times.

Fossum relates to a technique for dead-pixel correction, in which dead pixels are identified, and a grid of data indicating dead pixels is stored (assuming that the total number does not exceed a pre-set limit). If any plurality of dead pixels occurs in one of several predefined configurations, such as an entire row or column being defective, of a pixel and all its immediate neighbors being defective, then only one dead-pixel address is stored for the entire set, along with a code indicating which of those configurations is present. However, Applicant has found nothing in Fossum that would teach or suggest “storage means for storing positional information of the plurality of defective pixels and peripheral, non-defective pixels for correcting the defective pixels within the block as regional information of the defective pixels” or “correction means for correcting the defective pixels by using the peripheral pixels of the defective pixels, wherein said correction means corrects the plurality of defective pixels within the block based on the positional information of the plurality of defective pixels and peripheral, non-defective pixels for correcting the defective pixels within the block as region information of the defective pixels,” as recited in Claim 1.

The disclosures of Ianni and Murakami do not remedy the deficiencies of Fossum.

Unlike the apparatus of Claim 1, Ianni does not even relate to correcting defective pixels, but rather to a data acquisition circuit for merely locating failure signals. Murakami relates to an apparatus for identifying defective pixels in a digital image

converted from an original image from a reading device, the digital image including normal pixels properly converted from the original image and defective pixels. After defective pixels are identified, coordinate values and position data of the pixels identified as defective pixels are transferred, along with the pixel values, to a defective pixel correcting unit, which corrects the pixel values by interpolation based on the values of normal pixels surrounding the defective pixels.

However, Applicant has found nothing in Ianni or Murakami that would teach or suggest “storage means for storing positional information of the plurality of defective pixels and peripheral, non-defective pixels for correcting the defective pixels within the block as regional information of the defective pixels” or “correction means for correcting the defective pixels by using the peripheral pixels of the defective pixels, wherein said correction means corrects the plurality of defective pixels within the block based on the positional information of the plurality of defective pixels and peripheral, non-defective pixels for correcting the defective pixels within the block as region information of the defective pixels,” as recited in Claim 1.

Accordingly, Applicant submits that Claim 1 is patentable over Fossum, Ianni and Murakami, whether considered separately or in any permissible combination (if any).

A review of the other art of record has failed to reveal anything which, in Applicant’s opinion, would remedy the deficiencies of the art discussed above, as references against Claim 1.

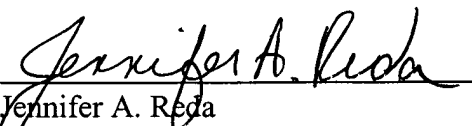
Independent Claims 35 and 37 are method and storage medium claims, respectively, corresponding to apparatus Claim 1, and are believed to be patentable over the cited prior art for at least the same reasons as discussed above in connection with Claim 1.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and the allowance of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,


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